

SESHASAYEE PAPER AND BOARDS LIMITED
ERODE - 638 007, INDIA

UNIT PROFILE

Seshasayee Paper and Boards Limited (SPB), the flagship company belonging to 'ESVIN GROUP', operates an integrated pulp, paper and paper board Mill at Pallipalayam, Erode-638 007, Namakkal District, TamilNadu, India. SPB commenced commercial production in December 1962, on commissioning a 20000 tpa integrated facility, comprising a Pulp Mill and two Paper Machines (PM-1 and PM-2), capable of producing, writing, printing, Kraft and poster varieties of paper. The Plant capacity was expanded to 35000 TPA in 1967-68, by modification of PM-2 and addition of a third Paper Machine (PM-3). In the second stage of expansion, undertaken in 1976, capacity was enhanced to 55000 TPA, through addition of a 60 tpd new Paper Machine (PM-4). The expansion of the company was not done in a single stroke. It took place in stages and hence we have multiple production lines.

EXPANSION / MODERNIZATION PROJECT:

The Company embarked on an Expansion / Modernization Project to enhance its production capacity from 60000 tonnes per annum, to 1, 15,000 tonnes per annum and to upgrade some of the existing facilities, at an estimated cost of Rs 1890 millions. The said Expansion / Modernization Project was completed in December 2000. After successful trials, the Commercial Production out of the new Paper Machine (MFIII) commenced on July 1, 2000. The Production Capacity of the New Machine is equivalent to the Combined Capacity of all the four Old Machines. The current installed capacity of the Company stands at 1, 15,000 tonnes per annum.

Captive cogeneration plant was commissioned in the year 2005 with high pressure steam (106 ksc) produced in the state of the art AFBC boiler, integrated to 21 MW Double Extraction Condensing Steam turbine generator for producing steam and power for process use.. The boiler with the highest operating pressure is first of its kind among the integrated pulp and paper mills in India. High thermal efficiency of the boiler and high cycle efficiency of the co-generation plant coupled with advanced instrumentation and controls in place has contributed to substantial energy saving.

Initially there were three Boilers and three Turbo-Generators contributing to 30% of the total power consumption after installation of CPP, the in house power generation had gone up to 90% of the total consumption with grid drawal power kept to the minimum.

Currently SPB has embarked on a “Mill Development Plan” (MDP).The prime objective of this is to improve energy and environmental performance. The Objectives of MDP are;

- ✓ Install latest energy efficient and environment friendly pulping technology namely Rapid Displacement Heating (RDH)
- ✓ Make mill operations more eco-friendly by installing oxygen delignification system and elemental chlorine free bleaching
- ✓ Install lime kiln to minimize solid wastes (commissioned and is in service now)
- ✓ Reduce dependence on Imported Pulp (Foreign Exchange Saving)
- ✓ Free Flow Falling Film Evaporation Plant replacing the old energy inefficient tubular Evaporation plant
- ✓ Install New Energy Efficient High Pressure Chemical Recovery Boiler and Utilize steam for generating additional power, from Black Liquor (Bio-mass) and thereby reducing steam from fossil fuel & drawl of power from grid

ENERGY CONSUMPTION:

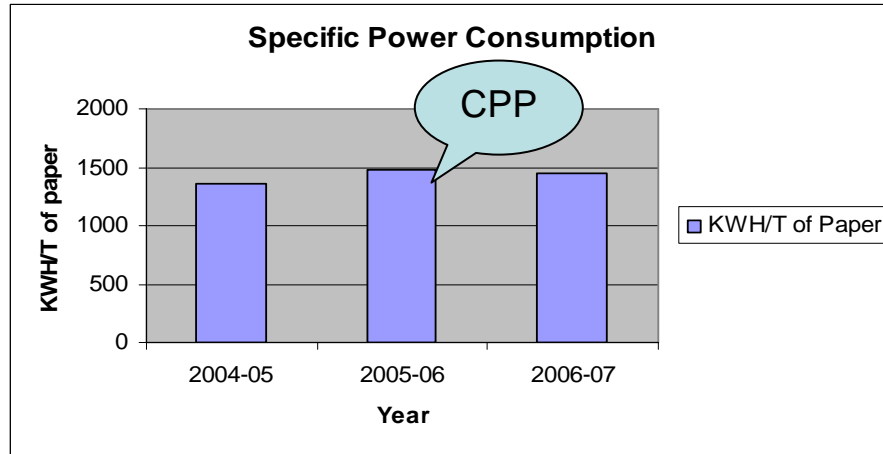
SPB envisaged the importance of energy conservation way back and has implemented many energy conservation measures in the unit. The specific energy consumption and the energy cost have come down to a great extent because of these measures.

Description	Unit	2004-05	2005-06	2006-07
Electrical Energy	KWH/T	1364	1479	1449*
Thermal Energy	M Kcal/T	6.01	5.80	6.02**
Energy Cost as % of manufacturing cost	%	23%	19%	17%

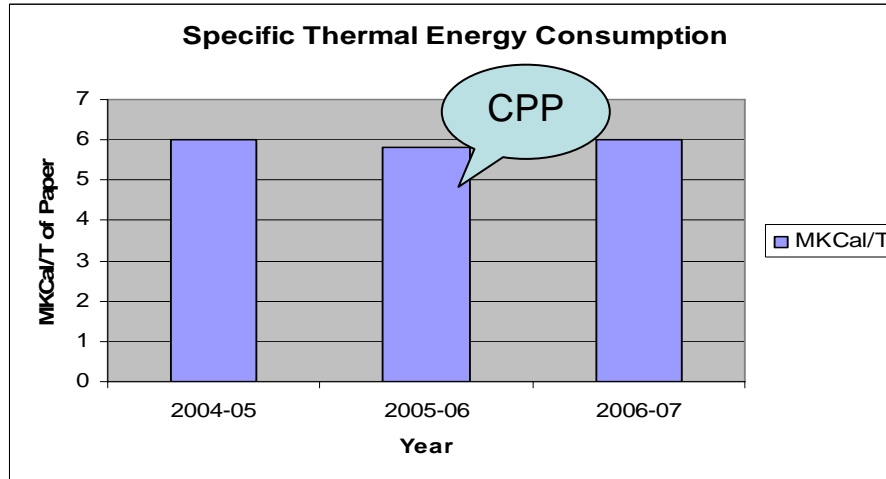
* - The marginal increase in power consumption from the year 2004 to 2007 is due to the Station Power Consumption (2.1MW) of CPP.

** - The steam consumption has increased due to the steam (250TPD) used in Deaeration facility.

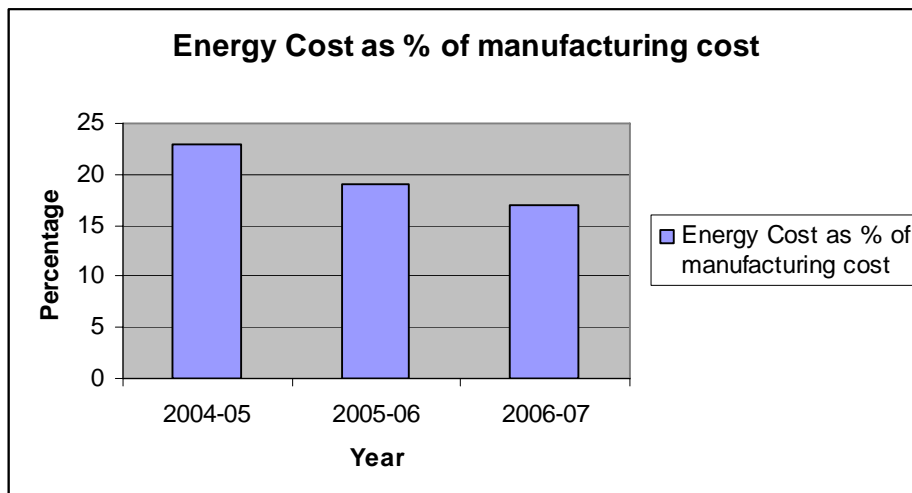
SPECIFIC POWER CONSUMPTION:



SPECIFIC THERMAL ENERGY CONSUMPTION:



ENERGY COST AS % OF MANUFACTURING COST:



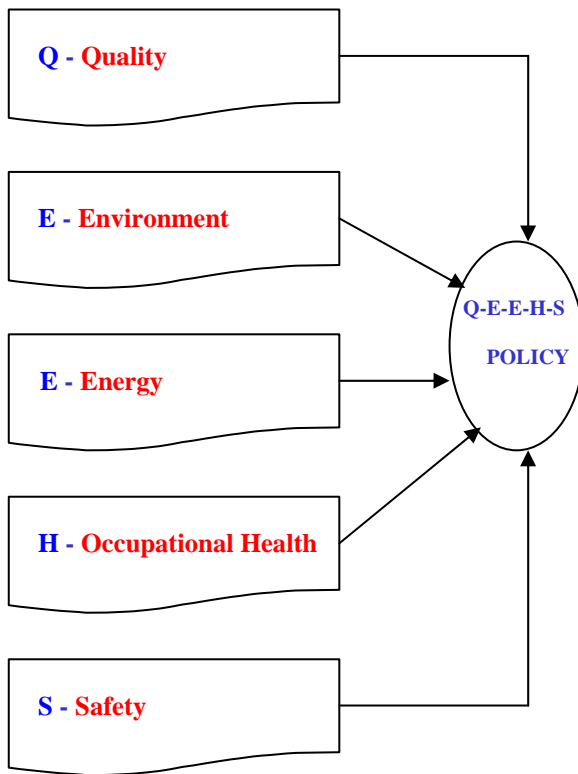
ENERGY CONSERVATION COMMITMENT AND POLICY:

The company has an integrated policy called QEEHS policy as given below;



Seshasayee Paper and Boards Limited
Erode - 638 007 - Tamilnadu - India

Q - E - E - H - S Policy



We, at SPB are committed to continually improve our Quality, Environment, Energy, Occupational Health and Safety Management Systems with a view to promote

- ★ trust of customers and other stakeholders
- ★ abatement of pollution
- ★ efficient use of energy and other resources
- ★ well being of employees and safety of occupational work place
- ★ competence and effective participation of all employees and service providers and
- ★ compliance of all applicable legal and other requirements

03.09.2005

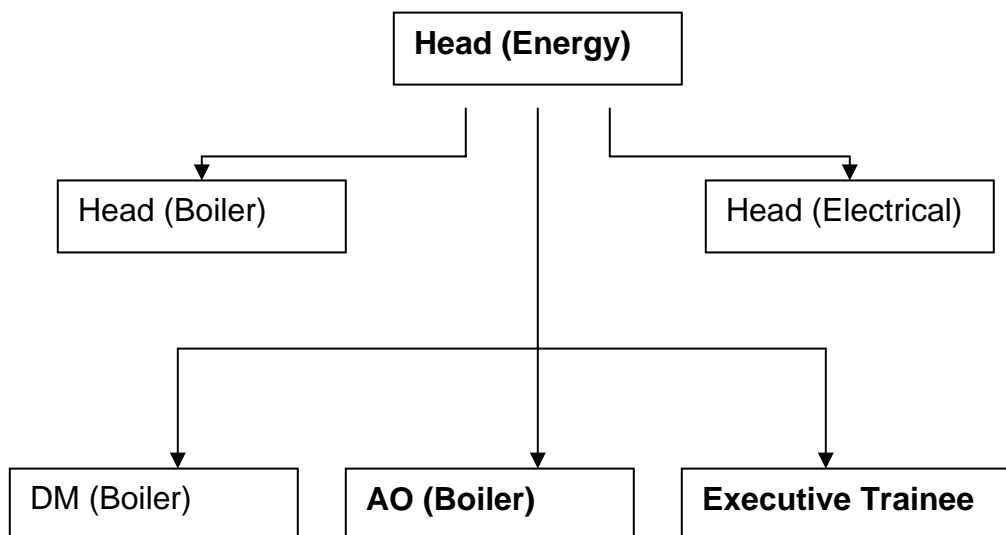
N.GOPALARATNAM
Chairman and Managing Director

ENERGY CONSERVATION ACHIEVEMENTS (2006-07):

The major energy conservation projects implemented in the year 2006-07 are as below;

SNo	Scheme	Energy Saving	Annual Saving Rs. Lakhs	Investment Rs. Lakhs
STEAM				
1	Reduction in steam consumption to Ep stage & hot water tank	1174 ton of Coal/year	32.86	Nil
2	Replacement of MG Hood Air Heaters	107 ton of Coal/year	2.99	3
POWER				
3	Advanced DEB scheme for CPP with VFD for Fans for Boiler # 10	280kW	40.8	5
4	Stopping of ISDM2 refiner in stock preparation	332880 kWh/year	5.99	Nil
5	Stopping of one vacuum pump in Bagasse brown stock washer	249660 kWh/year	4.49	Nil
6	Stopping of one fan in the cooling tower in CPP	249660 kWh/year	4.49	Nil

ENERGY CELL TEAM STRUCTURE:



Dr.T.G. Sundara Raman, who is a post graduate in chemical engineering with doctorate in the same field from IIT, heads the energy cell. He is assisted by qualified persons from electrical and thermal engineering divisions who are engineers with post graduate degree in the same field, management and are designated energy managers. The persons who are assigned full time responsibility of energy conservation are shown in block letters. Energy management is an additional responsibility for the rest.

ENERGY CONSERVATION PLANS AND TARGETS:

ENERGY CONSERVATION MEASURES PLANNED FOR 2007-08						
S.No	Scheme	Reduction in Energy consumption		Annual Savings	Investment	Payback (months)
		Unit	Qty	Rs.Lakhs	Rs.Lakhs	
POWER						
1	Power saving by frequency reduction	KW	266	3.11	Nil	-
2	Energy efficient feed pump for boiler 10	KW	225	32.52	25	9
3	Reduce impeller size to 350 mm in CPP cooling water pumps	KW	50	7.23	1.5	2
4	Energy efficient pumps for stock (1-4)	KW	47	6.79	7	12
5	VFP s for pumps	KW	137	19.8	43.7	26
6	Using the 14" pipe line for supplying water from Intake well to WTP so as to reduce power at intake well pumping	KW	50	7.23	2	2
7	Energy Efficient fans for MF-2 hood exhaust fans 6 nos	KW	8.4	1.21	1.64	16
8	Energy efficient motors - 12 nos	KW	80	11.56	13.3	14
9	Demand controllers for MF3 compressed air system	KW	19	2.75	6	26
10	Replacement of repulper by chute in Wood Decker and Bagasse Thickeners	KW	10	1.45	1	8
Total		KW	892.4	93.65	101.14	-
STEAM						
11	Johnson rotary joints for MF-1 machine	tpd	6	9.31	18.8	24
12	Blow heat recovery system for old Pandia digester	tpd	30	21.60	3.73	3
13	Reduction in steam consumption in fiber- line for PO1 filtrate cooler Heat recovery(For three months alone)	tpd	144	38.88	25.00	0.5
14	Reduction in steam consumption in EOP discharge Stream heat recovery	tpd	72	19.44		1
Total		tpd	252	89.23	47.53	-

ENVIRONMENT AND SAFETY:

The Company attaches paramount importance to the conservation and improvement of the environment.

Water:

Being ISO14001 Certified Company, we have considerably reduced the water consumption from 130m³/t to 90m³/t. We have segregated our mill effluent and this has helped to recycle a portion of the waste water back into the system. For effluents with high BOD and COD, we have anaerobic system which has helped us to reduce energy in aeration facility. The entire treated effluent is used to irrigate around thousand acres of land for sugarcane cultivation. We have a tri-partite agreement by

which Ponni Sugars (Sister Concern of SPB) gets the sugarcane from the farmers and in turn supplies Bagasse for Paper Making.

Air:

There are Electro Static Precipitators for all the Boilers to control dust emission. We have Environment Management Programme (EMP) through which dust prone areas in the mill are identified and necessary steps are taken.

Noise:

Areas with high level noise are identified and boards are displayed. Noise hood is provided wherever possible, else Personal Protective Equipments are provided.

SPB has gone for MDP project to adopt the following Energy and Environmental friendly technologies in Paper making process.

- Rapid Displacement Heating system for pulping - To reduce steam consumption & odour
- Rotary lime Kiln - To recycle lime sludge , thereby reducing fresh limestone intake
- Elemental chlorine free Bleaching - To reduce AOX
- Plantation - Afforestation and self source for raw material

These facilities will ensure sustained compliance by the Company, of the pollution control norms prescribed by the Pollution Control Authorities.

Safety:

We have full-fledged safety department. We conduct many training programmes for all work men including contract workers on, awareness of safety. We have Occupational Health Centre (OHC) and appointed a doctor.

SPB has got ISO 14001 and OHSAS certification and committed to follow the guidelines as per ISO standards.

ENERGY CONSERVATION RELATED TO CLIMATE CHANGE DEVELOPMENT

Realizing the adverse impact of Global warming , SPB has made sincere efforts in reducing Green House Gases through implementation of Energy Conservation schemes (inclusive of innovative technologies specifically in Low grade heat recovery & increased steam and power generation from biomass – carbon neutral fuel, for process requirements).

The ongoing Energy conservation schemes shall be supplemented in due course with state-of-the-art innovative environment & climate friendly schemes. These can be seen in the projected steam savings with innovative technologies for the ensuing years. In this connection, it is worthwhile mentioning that 3 projects (all related to Energy Conservation) have already been taken up for CDM and the lead member had served in the National Board of Climate Change Development Committee during the inception year.

As a lead player in the promotion of Climate Change Development, SPB shall be highlighting the Green House Gas reduction level in terms of CO₂ (equivalent) reduction from the year 2007-08.